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Dorothy Fecske, Game and Fish Department furbearer biologist, inspects a mountain lion killed in North Dakota.

LION'S SHARE OF UNKNOWNNS

Piecing Together the Mountain Lion Puzzle

By Ron Wilson

Five female mountain lions taken in the badlands in fall 2007 is added evidence that these animals aren't staging a return to western North Dakota, but have already taken hold.

"The fact that all five were females is an indication that we have some breeding activity in the badlands," said Dorothy Fecske, North Dakota Game and Fish Department furbearer biologist, who added that two of the females were traveling with other lions, most likely family groups. "Four of the five were subadults, and likely born in the region."

In an established population, Fecske said, the density of females is higher than males, as the former have a tendency to stay in the area they are born, while young males typically wander, sometimes great distances. "That's not to say that males aren't there, just that hunters are more likely to encounter females based on chance alone," she said.

The size of an established mountain lion population in the badlands is suspect, however, as biologists are still in the early stages of gathering as much information as possible about this animal. Much of the valuable information garnered comes from those animals taken during sanctioned hunting seasons, the third of which was held in 2007.

"We seem to have a healthy, established population in the badlands, but we need to be cautious about drawing conclusions too soon because our sample sizes are so small," Fecske said. "It's going to take multiple years of harvest data, as well as additional information collected on the species, to fully understand our lion population."

Team what biologists conclude with the five lions harvested in 2007 with DNA analysis of 17 lions sampled since 2004, and the conclusion is that mountain lions have probably been breeding in the badlands for at least the past decade. The DNA analysis showed, Fecske said, that most of the lions were not related, signaling that multiple breeding-age females likely occurred in the badlands since the late 1990s. Moreover, the

age and sex structure of animals taken in the badlands in 2005-07 suggests the population hasn't fallen because of hunter harvest.

In the three mountain lion hunting seasons, only one breeding age female – mature cougars typically have their first litter at 3-4 years – was harvested. Fecske said the breeding-age females are the most important animals to keep track of, particularly for a relatively small and isolated population like we have in North Dakota, as they provide the resiliency in a mountain lion population.

In 2007, North Dakota's mountain lion season in Zone 1 (encompassing mostly the badlands) closed in early November following the harvest of a lion in McKenzie County, filling the zone's predetermined quota of five animals. The remainder of the state, Zone 2, where no lions were killed, remained open.

Findings also propose the mountain lion population may be expanding into the northern Missouri River breaks, which include the counties bordering Lake Sakakawea and the upper reaches of the Missouri River. "Based on the number of reported sightings in the Missouri River breaks, it appears mountain lions are spreading into that region," Fecske said. "This range expansion is into other high quality habitat; habitat we predicted would be suitable to the species."

Five confirmed sightings have been documented in the Missouri River breaks in roughly the last two years, compared to only one confirmed sighting the previous five years. The Three Affiliated Tribes also reported an increase in lion sightings on the Fort Berthold Reservation in 2007.

A Game and Fish Department habitat suitability map indicates the badlands and the Missouri River breaks contain sufficient suitable habitat to support a small population of 45 to 74 resident adult lions barring any hunting mortality.

Certainly, not all mountain lion sightings in North Dakota are verified. The majority, it turns out, are not what they seem, but rather domestic dogs and cats skulking through the shadows or some other wild animals that stir

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images of the big cats. In 2006, for instance, just 12 percent, or 26 of the 218 reported mountain lion sightings, were verified. Since 2004, only 52 of the 405 sightings were the real deal. Still, in general, about a third of the sightings lack evidence for verification, but can't be ruled out as being a mountain lion. These "probable" but "unverified" sightings occur in counties throughout the state.

In the past few years, mountain lions have been spotted and killed away from the badlands habitat that suits them best. These prairie cats, however, are believed to be in transition, moving along river and stream corridors and woody draws looking for habitat that meets their needs. "At this point, we don't have evidence that these cats are breeding on the prairie," Fecske said. "We look at them as transient animals."

Young male lions are the quintessential wanderers, but females, which have a tendency to stick much closer to where they were born, will occasionally set off for new ground. During the 2006-07 hunting season in North Dakota, two females were shot in prairie-dominated landscapes. Whether these females were born on the prairie or were immigrants that would have established homes ranges in the region remains a mystery. Neither animal had ever nursed young, nor did they have any young in their reproductive tracts.

Besides information gathered from lions shot by hunters, or killed illegally or accidentally, the Game and Fish quizzes hunters for possible sightings, and investigates those reports that filter in to the Department. Last winter, biologists also scanned miles of the badlands for lion tracks left in the snow. All efforts help to illuminate the existence of animals in North Dakota that are more secretive than anything else. What's unknown, unfortunately, remains the lion's share.

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Mountain lion tracks left in snow or dirt are often mistaken for other wild or domestic animals.

In late November 2006, Department biologists gathered in the badlands where a young male lion was inadvertently caught in a trap. They fit the 2-year-old animal with a radio-collar and have tracked his whereabouts off and on since. At last report, he had traveled more than 140 square miles in the badlands. "We don't know if he was born in the badlands or immigrated," Fecske said. "But it certainly appears that he's setting up a territory there."

To the pedestrian, you'd think the radio-collared lion would reveal many of the unknowns about mountain lions in the badlands, but it's not as easy as that. "It's difficult to come to many conclusions when you're dealing with only one collared cat," Fecske said. "Still, we are learning from this animal as he provides us basic information on habitat use and territory size. The badlands is a unique region, and we know very little about the ecology of mountain lions here. In time, with additional information from annual harvests, reported sighting information, and additional collared animals, we'll learn more."

RON WILSON is editor of North Dakota OUTDOORS.

Sighting Classification	2006	2005	2004
Unfounded	53	30	13
Improbable Unverified	53	26	21
Probable Unverified	86	44	27
Verified	26	18	8
Total	218	118	69

The above shows the number of reported sightings of mountain lions by sighting classification for 2004-06.